Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A scanning device ~~adapted to scan~~for scanning an interface surface provided on a product item, the interface surface having disposed thereon coded data indicative of an identity of the product item and of a plurality of reference points, each reference point corresponding to a respective location on the interface surface, the product item being provided in a sensing region, the scanning device including:

(a) a beam generator for generating at least one scanning beam having a predetermined spectrum;

(b) at least one beam controller for directing the at least one scanning beam into the sensing region through a scanning surface, the scanning surface being transmissive to radiation of at least a portion of the predetermined spectrum;

(c) a sensor for sensing at least some of the coded data on the interface surface of the product item; and

(d) a processor for generating, using at least some of the sensed coded data, product identity data indicative of the identity of the product item and position data representing the position of a sensed reference point on the interface surface.

2. (Currently amended) The scanning device of claim 1, wherein the scanning surface is formed from a conveyor ~~adapted to convey~~for conveying the product item through the sensing region, the conveyor having at least one portion that is substantially transmissive to at least a portion of the predetermined spectrum.

3. (Original) The scanning device of claim 2, wherein the transmissive portion is formed from a mesh.

4. (Original) The scanning device of claim 3, wherein the scanning beam passes through apertures in the mesh.

5. (Original) The scanning device of claim 2, wherein the transmissive portion is formed from material that is substantially transparent to at least a portion of the predetermined spectrum.

6. (Original) The scanning device of claim 1, wherein the coded data is printed on the interface surface in infrared ink and wherein at least a portion of the predetermined spectrum corresponds to at least a portion of the infrared spectrum.

7. (Currently amended) The scanning device of claim 1, wherein the coded data encodes an EPC associated with the product item, and wherein the processor determines the EPC.

8. (Original) The scanning device of claim 1, wherein the product identity data distinguishes the product item from every other product item.

9. (Currently amended) The scanning device of claim 1, wherein the processor generates scan data representing the identity of the scanned product item.

10. (Original) The scanning device of claim 9, the scan data being the product identity data.

11. (Original) The scanning device of claim 9, wherein the processor:

(a) determines the product identity data of the product item during a scan event; and,

(b) generates the scan data if the determined product identity data is different to product identity data determined during previous scan events.

12. (Original) The scanning device of claim 1, wherein the processor:

(a) compares the determined product identity data to previously determined product identity data; and,

(b) generates scan data representing the identity of the product item if the determined product identity data has not been previously determined.

13. (Original) The scanning device of claim 1, wherein the coded data is redundantly encoded.

14. (Currently amended) The scanning device of claim 13, wherein the processor ~~is adapted to use~~uses the redundantly encoded coded data to detect one or more errors in the coded data.

15. The scanning device of claim 14, wherein, in response to the detection of one or more errors, the scanning device performs at least one of:

(a) correcting the one or more detected errors;

(b) signaling a failed scan; and,

(c) ignoring the coded data.

16. (Original) The scanning device of claim 13, wherein the coded data is redundantly encoded using Reed-Solomon encoding.

17. (Cancelled)

18. (Cancelled)

19. (Original) The scanning device of claim 1, wherein the interface surface includes at least one region, the region including coded data indicative of an identity of the region, and wherein the processor determines the identity of the at least one region from at least some of the sensed coded data.

20. (Original) The scanning device of claim 18, wherein the at least one region includes at least one coded data portion, and wherein the coded data portion is indicative of the region identity.

21. (Original) The scanning device of claim 19, wherein the at least one region represents a user interactive element.

22. (Original) The scanning device of claim 1, wherein the interface surface is printed using a printer, to print the information and coded data substantially simultaneously.

23. (Original) The scanning device of claim 1, wherein the scanning device includes at least one deflector for deflecting the scanning beam in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch.

24. (Original) The scanning device of claim 23, wherein the coded data includes at a plurality of locations on the interface surface, a corresponding plurality of coded data portions, each coded data portion being indicative of an identity of the interface surface and the position of the coded data portion on the interface surface, and wherein the processor uses the sensed coded data portion to thereby:

(a) determine the identity of the interface surface;

(b) determine position data representing at least one of:

(c) a position of the sensed coded data portion on the interface surface; and,

(d) a position of the scanning patch relative to the interface surface;

(e) determine a description of the interface surface using the determined identity; and,

(f) identify the at least one region from the description and the position data.

25. (Original) The scanning device of claim 23, wherein the at least one deflector includes at least one of:

(a) a rotating holographic element;

(b) first and second acousto-optic deflectors; and,

(c) resonant scanning mirrors.

26. (Currently amended) The scanning device of claim 25, wherein the scanning device includes an amplitude modulator, positioned between ~~the~~ a laser and the at least one deflector, for modulating the amplitude of the scanning beam.

27. (Original) The scanning device of claim 26, wherein the scanning device:

(a) determines from radiation sensed by the sensor, using the modulation of the scanning beam, ambient light incident on the sensor;

(b) determines from radiation sensed by the sensor, using the determined ambient light incident on the sensor, the radiation reflected from the interface surface; and,

(c) senses the coded data from the radiation reflected from the interface surface.

28. (Original) The scanning device of claim 26, wherein the scanning device includes a focussing element positioned between the amplitude modulator and the at least one deflector for focussing the beam.

29. (Original) The scanning device of claim 1, wherein the scanning device includes a filter for filtering radiation incident on the sensor, the filter being at least one of:

(a) a near infrared filter;

(b) a bandpass filter; and,

(c) a longpass filter.

30. (Original) The scanning device of claim 1, wherein at least one beam controller directs the at least one scanning beam along at least a selected one of a number of patch beam paths into the sensing region.

31. (Original) The scanning device of claim 30, wherein each patch beam path extends into the sensing region at a respective angle.

32. (Original) The scanning device of claim 30, wherein the angle between respective patch beam paths is at least one of:

(a) at least 1°;

(b) at least 10°;

(c) at least 30°;

(d) at least 45°; and,

(e) at least 90°.

33. (Original) The scanning device of claim 30, wherein the beam controller includes at least one mirror for directing the scanning beam along a selected one of the patch beam paths.

34. (Original) The scanning device of claim 30, wherein the beam controller comprises:

(a) a first mirror;

(b) a plurality of second mirrors; and,

(c) a controller which controls the position of the first mirror to thereby reflect the scanning beam from a selected one of the second mirrors into the sensing region.

35. (Original) The scanning device of claim 34, wherein each second mirror defines at least one patch beam path, and wherein the controller controls the position of the first mirror to thereby direct the scanning beam along a selected patch beam path.

36. (Currently amended) The scanning device of claim 30, wherein the sensor ~~is adapted to sense~~senses radiation reflected from the product item along the selected patch beam path.

37. (Currently amended) The scanning device of claim 1, wherein the scanning device ~~being adapted to detect~~detects the presence of a plurality of product items in the sensing region.

38. (Currently amended) The scanning device of claim 37, wherein the processor ~~is adapted to~~:

(a) determines the presence of coded data during a scanning event;

(b) determines product identity data corresponding to the detected coded data; and,

(d) activates an alarm if the determined product identity data is indicative of more than one product item.

39. (Currently amended) The scanning device of claim 1, the coded data being disposed on or in a substrate in accordance with at least one layout, the layout having at least order n rotational symmetry, where n is at least two, the layout including n identical sub-layouts rotated 1/n revolutions apart about a ~~centre~~center of rotational symmetry of the layout, the coded data disposed in accordance with each sub-layout including rotation-indicating data that distinguishes the rotation of that sub-layout from the rotation of at least one other sub-layout within the layout.

40. (Currently amended) The scanning device of claim 39, wherein the rotation-indicating data of each sub-layout ~~is adapted to~~distinguishes the rotation of the sub-layout from the rotation of each other sub-layout.

41. (Original) The scanning device of claim 39, wherein the coded data includes at a plurality of locations on the interface surface, a corresponding plurality of coded data portions, and wherein each coded data portion has a plurality of codewords arranged in accordance with a respective layout, the plurality of codewords being indicative of the identity of the product item.

42. (Original) The scanning device of claim 41, wherein each sub-layout has at least one codeword that is different to the codeword of each other sub-layout.

43. (Original) The scanning device of claim 41, wherein each layout has at least one codeword that is different to at least one codeword of at least one other layout.

44. (Original) The scanning device of claim 41, wherein each layout has at least one codeword that is identical to at least one codeword of at least one other layout.

45. (Original) The scanning device of claim 41, wherein each codeword is formed from a number of data elements arranged in accordance with a respective sub-layout.

46. (Original) The scanning device of claim 45, wherein the data elements are arranged such that each data element has a unique position.

47. (Original) The scanning device of claim 46, wherein the positions of the data elements of respective sub-layouts are interleaved.

48. (Currently amended) The scanning device of claim 1, the coded data being disposed on or in a substrate in accordance with at least one layout, the layout having at least order n rotational symmetry, where n is at least two, the layout encoding orientation-indicating data comprising a sequence of an integer multiple m of n symbols, where m is one or more, each encoded symbol being distributed at n locations about a ~~centre~~ center of rotational symmetry of the layout such that decoding the symbols at each of the n orientations of the layout produces n representations of the orientation-indicating data, each representation comprising a different cyclic shift of the orientation-indicating data and being indicative of the degree of rotation of the layout.

49. (Original) The scanning device of claim 48, wherein the coded data includes at a plurality of locations on the interface surface, a corresponding plurality of coded data portions, and wherein each coded data portion has a plurality of codewords arranged in accordance with a respective layout, the plurality of codewords being indicative of the identity of the product item.

50. (Currently amended) The scanning device of claim 49, wherein the coded data includes a plurality of layouts of two or more layout types~~, each layout encoding its layout type~~

51. (Original) The scanning device of claim 50, wherein each layout encodes a distributed codeword wherein fragments of the distributed codeword are distributed between the two or more layout types in a predetermined manner such that the distributed codeword can be reconstructed from fragments located in a plurality of adjacent layouts of different types

52. (Original) The scanning device of claim 1, wherein the scanning device senses coded data from the interface surfaces of a number of product items substantially simultaneously.

53. (Original) The scanning device of claim 1, wherein the scanning device further includes a memory for storing the product identity.

54. (Currently amended) The scanning device of claim 1, wherein the coded data is disposed over at least one of:

(a) substantially all of any one of:

(i) ~~the~~ an entire product surface;

(ii) ~~the~~ a packaging; and,

(iii) ~~the~~ a label;

(b) more than 25% of any one of:

(i) ~~the~~ an entire product surface;

(ii) ~~the~~ a packaging; and,

(iii) ~~the~~ a label;

(c) more than 50% of any one of:

(i) ~~the~~ an entire product surface;

(ii) ~~the~~ a packaging; and,

(iii) ~~the~~ a label; and,

(d) more than 75% of any one of:

(i) ~~the~~ an entire product surface;

(ii) ~~the~~ a packaging; and,

(iii) ~~the~~ a label.

55. (Currently amended) The scanning device of claim 1, the scanning device being provided in an automated check-out, the coded data being disposed over a substantial portion of the interface surface, the check-out comprising a conveyor ~~adapted to convey~~for conveying the product item through the sensing region, wherein the scanning device directs the at least one scanning beam at the sensing region so as to sense at least some of the coded data as the conveyor causes the product item to pass through the sensing region.

56. (Currently amended) An automated check-out for scanning a product item having an interface surface associated therewith, the interface surface having coded data disposed over a substantial portion of the interface surface, the coded data being indicative of an identity of the product item, the automated check-out comprising:

(a) a scanning surface, the scanning surface being transmissive to radiation of at least a portion of a predetermined spectrum; and

(b) at least one scanning device ~~adapted to~~for:

(i) ~~(c)~~ directing at least one scanning beam having the predetermined spectrum into a sensing region through the scanning surface;

(ii) sensinge at least some of the coded data on the interface surface of a product item provided in the sensing region; and

(iiiii) generatinge, using at least some of the sensed coded data, product identity data indicative of the identity of the product item.

57. (Currently amended) The automated check-out of claim 56, wherein the scanning surface is formed from a conveyor ~~adapted to convey~~for conveying the product item through

the sensing region, the conveyor having at least one portion that is substantially transmissive to ~~to~~ at least a portion of the predetermined spectrum.

58. (Original) The automated check-out of claim 57, wherein the transmissive portion is formed from a mesh.

59. (Original) The automated check-out of claim 58, wherein the scanning beam passes through apertures in the mesh.

60. (Original) The automated check-out of claim 57, wherein the transmissive portion is formed from material that is substantially transparent to at least a portion of the predetermined spectrum.

61. (Original) The automated check-out of claim 56, wherein the check-out includes an alarm for activation in response to the detection of a scanning error.

62. (Original) The automated check-out of claim 61, wherein the scanning error includes at least sensing the presence of a plurality of product items in the sensing region.

63. (Currently amended) The automated check-out of claim 61, wherein the alarm is selected from the group comprising:

(a) a visual indicator displayed on a display associated with the check-out;

(b) an audible alarm signal; and

(c) a modification to the motion of the conveyor.

64. (Currently amended) The automated check-out of claim 56, wherein the check-out ~~is adapted to store~~stores scan data indicative of the identity of the product item in memory.

65. (Currently amended) The automated check-out of claim 64, wherein the check-out further comprises a communicator adapted to communicate with a computer system, and the communicator ~~being adapted to send~~sends to the computer system at least one of:

(a) the product identity data; and

(b) the scan data.

66. (Currently amended) The automated check-out of claim 64, wherein the memory is located in at least one of:

(a) the automated check-out; and

(b) a computer system.

67. (Cancelled)

68. (Currently amended) A system incorporating a scanning device as claimed in claim 1 and a laser scanning device ~~adapted to scan~~for scanning an interface surface provided on a product item, the interface surface having disposed thereon or therein coded data which includes, at a plurality of locations on the interface surface, a corresponding plurality of coded

data portions, each coded data portion being indicative of an identity of the product item, the product item being provided in a sensing region, the laser scanning device including:

(a) a laser for emitting at least one scanning beam, the scanning beam being directed in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch, the scanning patch being provided in the sensing region such that ~~it~~ the scanning beam exposes at least one coded data portion;

(b) a sensor for sensing the at least one exposed coded data portion; and

(c) a processor for determining, using at least some of the sensed coded data, product identity data indicative of the identity of the product item.

69. (Currently amended) A system incorporating a first scanning device as claimed in claim 1 and a second scanning device ~~adapted to scan~~for scanning an interface surface provided on a product item, the interface surface having disposed thereon coded data indicative of an identity of the product item, the product item being provided in a sensing region, the second scanning device including:

(a) a beam generator for emitting at least one scanning beam, the scanning beam being directed in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch provided in the sensing region;

(b) at least one beam controller for directing the at least one scanning beam along selected ones of a number of patch beam paths, each patch beam path extending into the sensing region at a respective angle;

(c) a sensor for sensing at least some of the coded data on the interface surface of the product item as the product item passes through the sensing region; and

(d) a processor for determining, using at least some of the sensed coded data, product identity data indicative of the identity of the product item.

70. (Currently amended) A system incorporating a first scanning device as claimed in claim 1 and a second scanning device ~~adapted to scan~~for scanning an interface surface provided on a product item, the interface surface having disposed thereon coded data indicative of an identity of the product item, the product item being provided in a sensing region, the second scanning device including:

(a) a beam generator for emitting at least one beam;

(b) first and second acousto-optic deflectors for deflecting the beam in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch;

(c) a sensor for sensing at least some of the coded data on the interface surface of the product item as the product item passes through the sensing region; and

(d) a processor for determining, using at least some of the sensed coded data, product identity data indicative of the identity of the product item.

71. (Currently amended) A system incorporating a first scanning device as claimed in claim 1 and a second scanning device for scanning ~~adapted to scan~~ an interface surface provided on a product item, the interface surface having disposed thereon coded data indicative of an identity of the product item, the product item being provided in a sensing region, the second scanning device including:

(a) a beam generator for emitting at least one beam;

(b) at least one rotating holographic optical element for selectively deflecting the beam in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch;

(c) a sensor for sensing at least some of the coded data on the interface surface of the product item as the product item passes through the sensing region; and

(d) a processor for determining, using at least some of the sensed coded data, product identity data indicative of the identity of the product item.

72. (Currently amended) A system incorporating a scanning device as claimed in claim 1 and a laser scanning device for scanning ~~adapted to scan~~ an interface surface provided on a product item, the interface surface having disposed thereon coded data which includes, at a plurality of locations on the interface surface, a corresponding plurality of coded data portions, each coded data portion being indicative of an identity of the product item, the laser scanning device including:

(a) a housing ~~adapted to be~~for being held by a user in use;

(b) a laser for emitting a scanning beam from the housing, the scanning beam being directed in first and second orthogonal directions to thereby generate a raster scan pattern over a scanning patch, the scanning patch being provided in the sensing region such that ~~it~~ the scanning beam exposes at least one coded data portion;

(c) a sensor for sensing the at least one exposed coded data portion;

(d) a processor for determining, using at least some of the sensed coded data, product identity data indicative of the identity of the product item.

73. (Currently amended) A system incorporating a scanning device as claimed in claim 1 and a reading device ~~adapted to read~~for reading an interface surface provided on a product item, the interface surface having disposed thereon coded data indicative of an identity of the product item, the reading device including:

(a) a housing for mounting on at least one finger of the user in use, the housing including an aperture;

(b) a radiation source for illuminating the interface surface of the product item;

(c) a sensor provided in the housing for sensing at least some of the coded data through the aperture when the product item is positioned substantially in contact with the housing; and

(d) a processor for determining, using at least some of the sensed coded data, product identity data indicative of the identity of the product item.

74. (Currently amended) A system incorporating a scanning device as claimed in claim 1 and a reading device ~~adapted to read~~for reading an interface surface provided on a product item, the interface surface having disposed thereon coded data which includes, at a plurality of locations on the interface surface, a corresponding plurality of coded data portions, each coded data portion being indicative of an identity of the product item, the reading device including:

(a) a housing adapted ~~to be~~for being held by a user in use;

(b) a radiation source for emitting radiation from the housing such that ~~it~~ the radiation exposes at least one coded data portion;

(c) an image sensor for sensing the at least one exposed coded data portion;

(d) a processor for determining, using at least some of the sensed coded data, product identity data indicative of the identity of the product item.